

TWO NEW SPECIES OF *EUPHUMOSIA* FROM PAPUA NEW GUINEA  
(DIPTERA: CALLIPHORIDAE)

HIROMU KURAHASHI

Department of Medical Entomology, National Institute of Health, 2-10-35, Kamiosaki, Shinagawa-ku,  
Tokyo 141, Japan

Two new species of the calliphorid blow flies are described from Papua New Guinea under the names of *Euphumosia lopesi* and *E. robertsi*. Body coloration and mesonotal pattern are characteristic and differ from those of the closely allied species, *E. evittata* Torgerson & James, 1967.

Key words: *Euphumosia* – Diptera – Calliphoridae

During studies on the New Guinea blow flies, the present author had an opportunity to examine the specimens of the calliphorid flies collected by Dr H. Roberts, Forest Research Station, Bulolo, PNG and Dr S. Shinonaga, Tokyo Medical and Dental University, Tokyo. Among these specimens, were males and females of two undescribed species of *Euphumosia* Malloch. In general external morphology, these two new forms are closely related to the previously known species, *Euphumosia evittata* Torgerson & James, 1967 to which they run in the key by Torgerson & James (1967) and Kurahashi (1987) and from which they are clearly different in several important criteria adopted in the following key.

Kurahashi's key (1987:52) to the species of *Euphumosia* should be slightly modified in order to incorporate the present two new species.

- 3. Mesonotum when viewed from behind with 3 subshining broad stripes, apparently lacking in pollen, which enclose 2 pollinose stripes; when viewed from in front the apparently pollinose and subshining area are reversed. . . . . 4
- Mesonotal pattern of pollinose and non-pollinose stripe obscure, whether viewed from in front or behind . . . . . 3a
- 3a. Mesonotum and scutellum entirely metallic purple, with coppery tinge; abdomen brown with coppery reflection, tergite 1 + 2 metallic; epaulet and basicosta black . . . . . *E. lopesi* sp. nov.
- Mesonotum and scutellum entirely testaceous yellow; abdomen testaceous yellow,

- sometimes darkened apically; epaulet light brown, basicosta sometimes fuscated. . . 3b
- 3b. Mesonotum with two median narrow and one lateral narrow fuscous brown stripes visible when viewed from behind; mesopleura and sternopleura entirely or largely fuscous in ground color; male eye facets on upper 2/3 enlarged and demarcated from small ones on lower 1/3 . . . . . *E. robertsi* sp. nov.
- Mesonotum without distinct narrow fuscous median and lateral stripes when viewed from behind; mesopleura and sternopleura entirely testaceous; male eye facets on upper 2/3 not so remarkably enlarged and demarcated from those on lower 1/3. . . *E. evittata* Torgerson & James

*Euphumosia lopesi* sp. nov.

♂.-Head: eyes bare, holoptic, almost touched; frons index less than 0.01; frontal stripe reddish brown, obliterated at narrowest point, widened anteriorly; parafrontalia yellowish gray, very narrow, reduced to fine line at narrowest point, less than 1/3 of the width of anterior ocellus, anterior part widened anteriorly, with rather long black setulae anteriorly, with ca 10 pairs of long *ori* and several fine interstitials on anterior half of frons; parafacialia covered with yellowish gray dusting which produce irregular greasy spots under certain incidence of light, usually appearing at the level of antennal bases in profile, bare; facialia fuscous, submetallic, with black setulae on lower half; face fuscous, submetallic, yellowish under the base of antennae without median carina; medianae narrow, brown, bare; vibrissaria not distinguishable

from medianae, brown, with several fine black setulae close to vibrissal angle; vibrissae well developed; epistome fuscous brown, projecting forward as long as 2 X the width of 3rd antennal segment; anterior half of peristom in profile bearing a series of well developed bristles; genae brown, darkened posteriorly, sparsely yellowish-gray dusted, clothed with black hairs, hairs on posterior edge intermixed with yellowish brown ones; postgenae fuscous black, yellowish gray dusted, clothed with golden hairs; occiput concolorous with postgenae and largely clothed with golden hairs; 2nd antennal segment reddish brown; 3rd segment largely fuscous except for base and venter, pubescent, nearly 5 X as long as 2nd; arista blackish except for basal 1/3 reddish, long plumose; palpi slender, orange, largely with black setulae except for several fine yellow ones at base.

*Thorax*: wholly metallic purple, with coppery tinge, gray-dusted on anterior part of mesonotum and sternopleura, mesonotum blackish haired, with indistinct median narrow black stripe and lateral one; humeri reddish with yellow and black hairs; postalar calli and scutellum concolorous with mesonotum, black haired; ventral surface of scutellum with fine pale hairs; mesopleura largely clothed with black hairs, tuft of fine yellow hairs present below prostigmatal bristle; prosternum largely fuscous, sparsely with fine pale hairs; propleura yellowish haired; supraspiracular convexity pubescent; pleurotergite with fuscous hairs; mesothoracic spiracle orange, large, the vertical length subequal to that of mesopleuron; metathoracic one is fuscous, with pale hairs along the anteroventral margin of anterior flap; postalar declivity with tuft of black hairs in central circle; neither tympanic nor anterior parasquamal tuft developed; suprasquamal ridge with several fine black setulae on posterior extremity. Chaetotaxy; *ac* 1 + 3, *dc* 2 + 3, *ia* 1 + 2, *h* 2, *ph* 1, *prs* 1, *sa* 3, *pa* 2 - 3, *st* 2 + 1, *sc* 3 + 1, *pp* 1 - 2, *pst* 1 - 2.

*Wings*: hyaline, slightly infuscated along veins and at base; veins blackish; epaulet and basicosta black; subcostal sclerite fuscous brown, blackish pubescent; node of 2nd and 3rd longitudinal veins with black hairs above and below; 4th longitudinal vein bent forward with a sharp angle, but the corner is round;  $R_5$  open; squamae blackish entirely, thoracic one is lobulated, largely bare on upper surface, pubescent basally. Halteres yellowish brown.

*Legs*: orange, more or less darkened on apical four segments of tarsi, clothed with black hairs; coxae, trochanter and the bases of femora intermixed with yellow hairs; fore tibia with 1 *p*, 4-5 short *ad* and 1 short *pd*; mid tibia with 1 *ad*, 2 *p* and 1 *v*, often with 1 short *pd*; hind tibia with 3 *ad* and 1 *av*.

*Abdomen*: largely testaceous yellow, sub-metallic, with copper or golden reflection; tergite 1 + 2 largely metallic purple except for lateral and ventral sides of abdomen, with 1 pair of lateral marginal bristle; tergite 3 with a trace of median black stripe and very narrow incomplete metallic purple marginal band, with several lateral marginals; tergites 4-5 without marginal band, with row of marginal bristles, without discals; sternite 1 and anterior margin of sternite 2 fuscous, clothed with yellow soft hairs; posterior 2/3 of sternite 2 clothed with long fine black bristly hairs as well as on sternites 3-4. Hypopygium normal in size, male genitalia is as shown in Fig. 1.

♀-*Head*: eyes dichoptic, separated at vertex by a distance equal to 0.20 of head width; frontal stripe broad, narrowed toward vertex, reddish brown, blackish setulose in the middle of frons, 2 X the width of parafrontalia just in front of anterior ocellus, without interfrontal bristle; parafrontalia dull golden dusted, with rather long black setulae on entire length, provided with ca 7 pairs of *ori*; *ors* 2 + 1; *oc* developed; *acoc* absent; *pooc* weakly developed; *ov* and *iv* well developed; *poc* divergent; *occ* 1, rather long. *Thorax*: mesonotum with copper and purple tinges. *Legs*: fore tibia with fine *pd*, 1 strong *p* and incomplete row of short *ad*. *Abdomen*: tergite 3 with distinct metallic purple marginal band, but without median stripe. Ovipositor short. Otherwise same as for ♂.

*Length*: 10.0-10.5 mm.

Holotype ♂, PAPUA NEW GUINEA: Morobe Prov., Wau, Mt. Kaindi, 31.xii.1981, S. Shinonaga. Paratypes, PAPUA NEW GUINEA: 1 ♀, Morobe Prov., Wau, Mt. Kaindi, 10-18.i.1974, S. Shinonaga; 1 ♂, E. Highlands Prov., Goroka, Provincial Park, Mt. Gahavisuka, fly trap, H. Roberts & J. Dobunaba; 1 ♂, Morobe Prov., Wau, Kuper Range, 2,450 m, upper montane forest, fly trap, 19.iv.1988, H. Roberts.

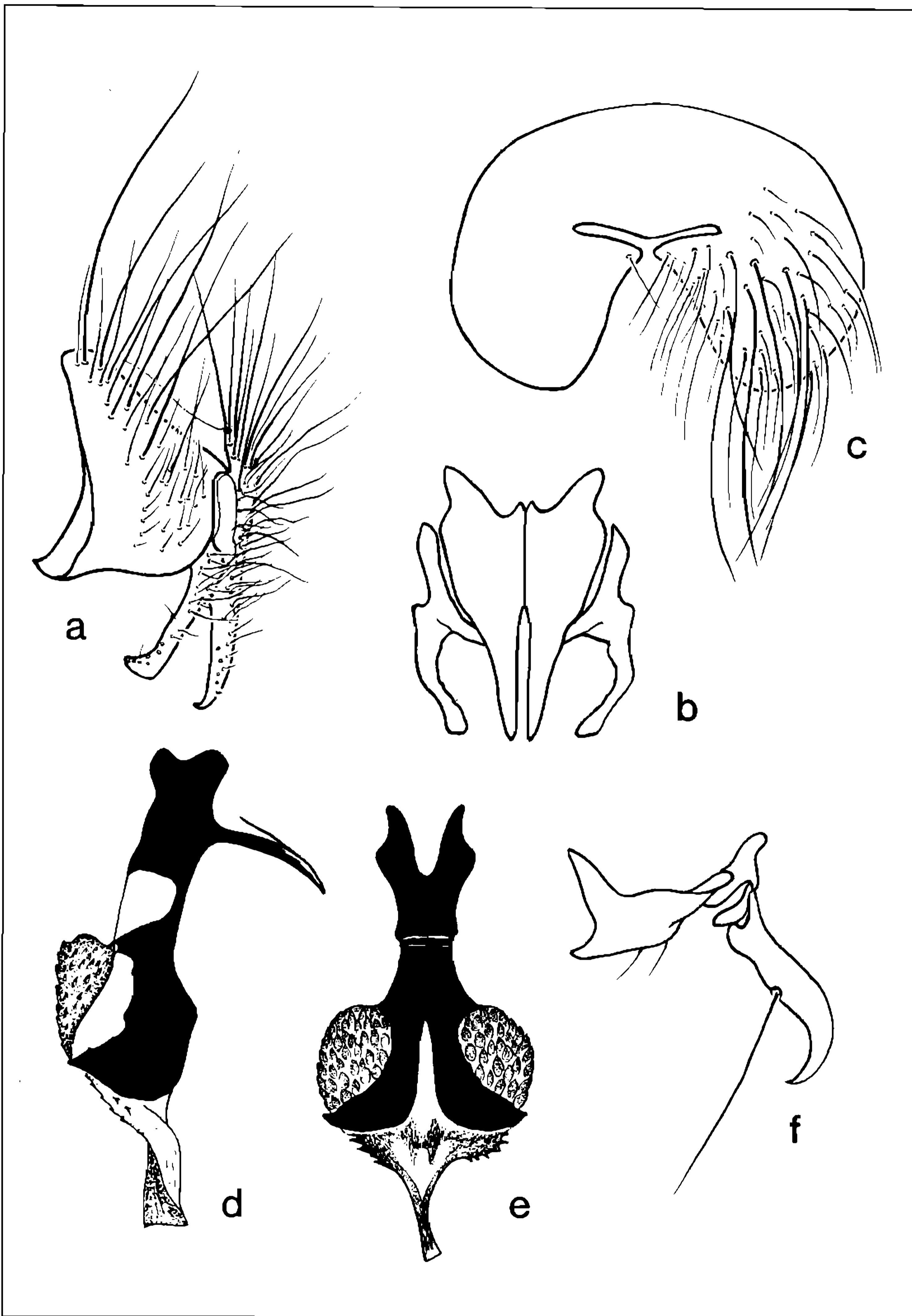


Fig. 1: *Euphmosia lopesi* sp. nov., male hypopygium. a, epandrium, cercus and paralobus, lateral view; b, cerci and paralobi, caudal view; c, 5th sternite, ventral view; d, aedeagus, lateral view; e, aedeagus, posterior view; f, anterior and posterior parameres, lateral view.

The specific name is dedicated to my colleague, Dr. Hugo de Souza Lopes, Instituto Oswaldo Cruz, Rio de Janeiro, for commemorating his eightieth birthday.

Type depository. Holotype in B. P. Bishop Museum, Honolulu; paratypes in Forestry Research Station, Bulolo; the author's collection in National Science Museum Tokyo.

Bionomics. Adults are attracted to decaying meat and human feces in forests.

Distribution. Papua New Guinea.

*Euphumosia robertsi* sp. nov.

*♂-Head*: eyes bare, holoptic, very closely approximated, separated by the width of one ocellus; facets of upper 2/3 enlarged and demarcated from small ones on lower 1/3; frons index 0.01; frontal stripe obliterated at narrowest point of frons, widened anteriorly, blackish brown; parafacialia very narrow, less than the width of one of largest facets; parafacialia reddish brown, dull golden-dusted, with yellow setulae anteriorly, provided with ca 10 pairs of developed *ori*; face yellowish brown, slightly gray-dusted, bare, with no median carina; facialia yellowish brown, slightly gray-dusted, with black setulae on lower 1/2; medianae narrow, brown, very slightly yellowish-gray dusted, bare; vibrissaria narrow, yellowish brown, with several black setulae; vibrissae well developed; epistome slightly projecting forward, less than the width of 3rd antennal segment, yellowish brown; genae pale brown, yellowish-gray dusted and clothed with black hairs on anterior half, posterior half covered with pale gray dustings and yellowish hairs; postgenae concolorous with genae, pale gray-dusted, with yellow hairs; occiput fuscous, pale gray-dusted, clothed with yellow and brown hairs, with a postorbital row of black hairs; 2nd antennal segment yellowish orange, with 1 strong bristle and several black setulae; 3rd antennal segment fuscous except for venter and base reddish, pubescent, about 3 X as long as 2nd; arista brown on basal half, blackish on apical half, long plumose; palpi pale yellow, blackish setulose, with several fine yellow setulae basally.

*Thorax*: wholly yellowish brown, covered with yellowish brown dustings, mesonotal pattern of pollinose and non-pollinose stripes

obscure, whether view from in front and behind, two median fine longitudinal and one lateral stripes are present, additional irregular dark spots are also present out side of lateral one; humeri concolorous with dorsum, clothed with yellow hairs except for few black ones; postalar calli concolorous with dorsum, clothed with black hairs; scutellum concolorous with dorsum, submetallic yellowish brown, clothed with black hairs on disc, with yellow hairs on ventral surface; prosternum yellow, with very short fine yellow hairs anteriorly; propleura yellow, yellowish setulose; supraspiracular convexity yellowish pubescent; hypopleural hairs long, yellow, bearing along upper margin and row of hypopleural bristles; other pleural hairs mostly yellowish except for black ones on upper 1/2 of mesopleura and a few on pteropleura; mesopleura, sternopleura and hypopleura largely fuscous on discal part; mesothoracic spiracle large, vertical length subequal to that of mesopleuron, yellow; metathoracic one yellowish brown, with yellow fine hairs along anteroventral margin of anterior flap; postalar declivity with a tuft of yellow and brown hairs on central circle; tympanic tuft absent; anterior parasquamal tuft absent; suprasquamal ridge bare except for several fine yellow hairs on posterior extremity. Chaetotaxy; *ac* 2 + 3, *dc* 2 + 3, *ia* 1 + 2, *h* 2-3, *ph* 1, *prs* 1, *sa* 3, *pa* 2-3, *st* 2 + 1, *sc* 3 + 1, *n* 2, *pp* 1, *pst* 1.

*Wings*: hyaline, entirely yellowish-brown tinged; veins brown; epaulet yellowish brown; basicosta fuscous brown; subcostal sclerite yellowish brown, yellowish pubescent; node of 2nd and 3rd longitudinal veins with several black setulae above and below; 4th longitudinal vein bent forward at a sharp angle, the corner is rounded, the last section of the 4th vein from bend to wing edge curved inward; *R*<sub>5</sub> open; squamae brown, upper surface of thoracic one pubescent basally, bare apically. Halteres yellow.

*Legs*: entirely yellow, black haired, intermixed with yellow ones on coxae and femora; fore tibia with 3-4 short *ad* on basal half and with 1 *p*; mid tibia with 1 *ad*, 2 *p* and 1 *v*; hind tibia with 3 *ad* and 1-2 *av*.

*Abdomen*: entirely yellowish brown to brown, with very narrow fuscous marginal band on tergites 1 + 2 - 4, clothed with black hairs on disc, intermixed with yellow hairs on lateral



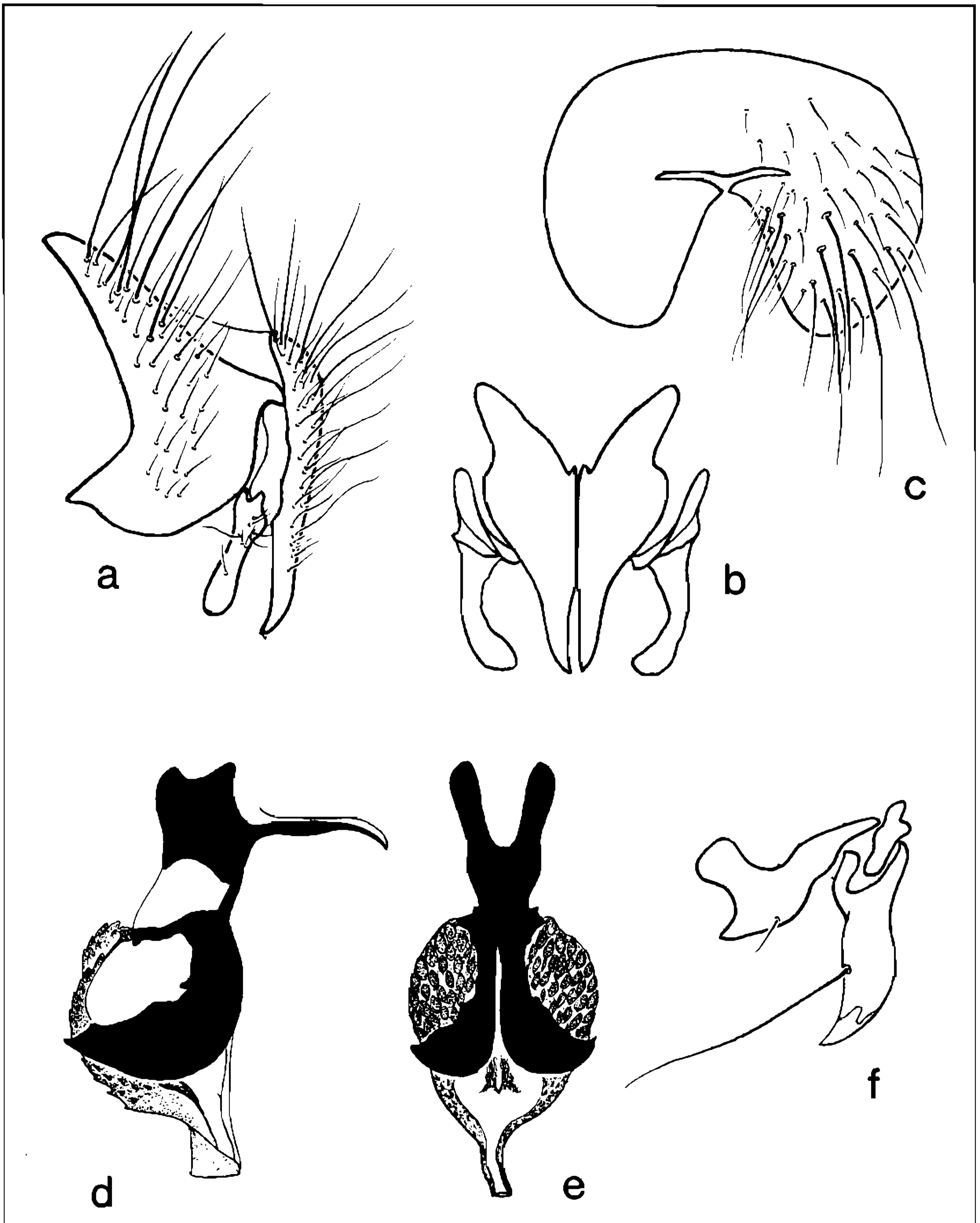


Fig. 2: *Euphmosia robertsi* sp. nov., male hypopygium. a, epandrium, cercus and paralobus, lateral view; b, cerci and paralobi, caudal view; c, 5th sternite, ventral view; d, aedeagus, lateral view; e, aedeagus, posterior view; f, anterior and posterior parameres, lateral view.

and ventral sides of tergites 1 + 2 - 3 and sternites 2-3, sternite 1 and anterior 1/3 of sternite 2 yellowish haired; median stripe absent; tergites 1 + 2 - 3 with several lateral marginal bristles; tergites 4-5 with row of marginal bris-

gles; sternite 1 yellow, clothed with short yellow hairs; sternites 2-4 with rather long black bristly hairs, anterior 1/3 of sternite 2 with yellow hairs. Hypopygium small in size, yellowish, male genitalia is as shown in Fig. 2.

♀-Head: eyes dichoptic, separated at vertex by a distance equal to 0.24 of head width; frontal stripe parallel-sided, slightly narrowed posteriorly, reddish brown, 3 X the width of one of parafrontalia just in front of anterior ocellus, with a few brown setulae at the level of anterior pair of proclinate *ors*; parafrontalia dull-golden dusted, with rather long black setulae, provided with ca 7 pairs of *ori* and a few interstitials; *ors* 2 + 1; *oc* developed; *acoc* absent; *pooc* weakly developed, *ov* and *iv* well developed; *poc* convergent or divergent; *occ* 1, convergent. Ovipositor short. Otherwise same as for ♂.

*Length*: 8.5-9.3 mm.

Holotype ♂, PNG: Morobe Prov. Wau, Kuper Range, 1,900 m, Lithocarpus/Bamboo forest, fly trap, 27.v.1988, H. Roberts. Paratypes, PNG: 2 ♀♀, same data as holotype; 1 ♀, Morobe Prov., Wau, Mt. Kaindi, 10-13.i.1974, S. Shinonaga.

The specific name of this new species is dedicated to Dr. H. Roberts, Forest Research Station, Bulolo, PNG, who discovered this

interesting fly and made a collection of male and female specimens for the description.

Type depository. Holotype in Bishop Museum (BPBM), Honolulu; paratypes in Forest Research Station (FRS), Bulolo, and the author's collection in National Science Museum (NSMT), Tokyo.

Bionomics. Adults are attracted to decaying meat and human feces in forests.

Distribution. Papua New Guinea.

#### ACKNOWLEDGEMENTS

To Dr Hywel Roberts, Forest Research Station, Bulolo, PNG and to Dr S. Shinonaga, Tokyo Medical and Dental University, Tokyo, for offering valuable material.

#### REFERENCES

- TORGERSON, R. L. & JAMES, M. T., 1967. Revision of the world species of *Euphumosia* (Diptera: Calliphoridae). *Pacif. Ins.*, 9: 205-242.  
 KURAHASHI, H., 1987. The blow flies of New Guinea, Bismarck Archipelago and Bougainville Island. *Ent. Soc. Jpn., Occ. Pub.*, 1: 1-99.